

Practical no: 2

REPRESENTATION OF DATA

Data Entry in MATLAB

- Data of AGE of 18 students of BSCS class

`v=[21,22,22,23,25,24,24,22,23,25,20,21,25,24,23,22,21,25]`

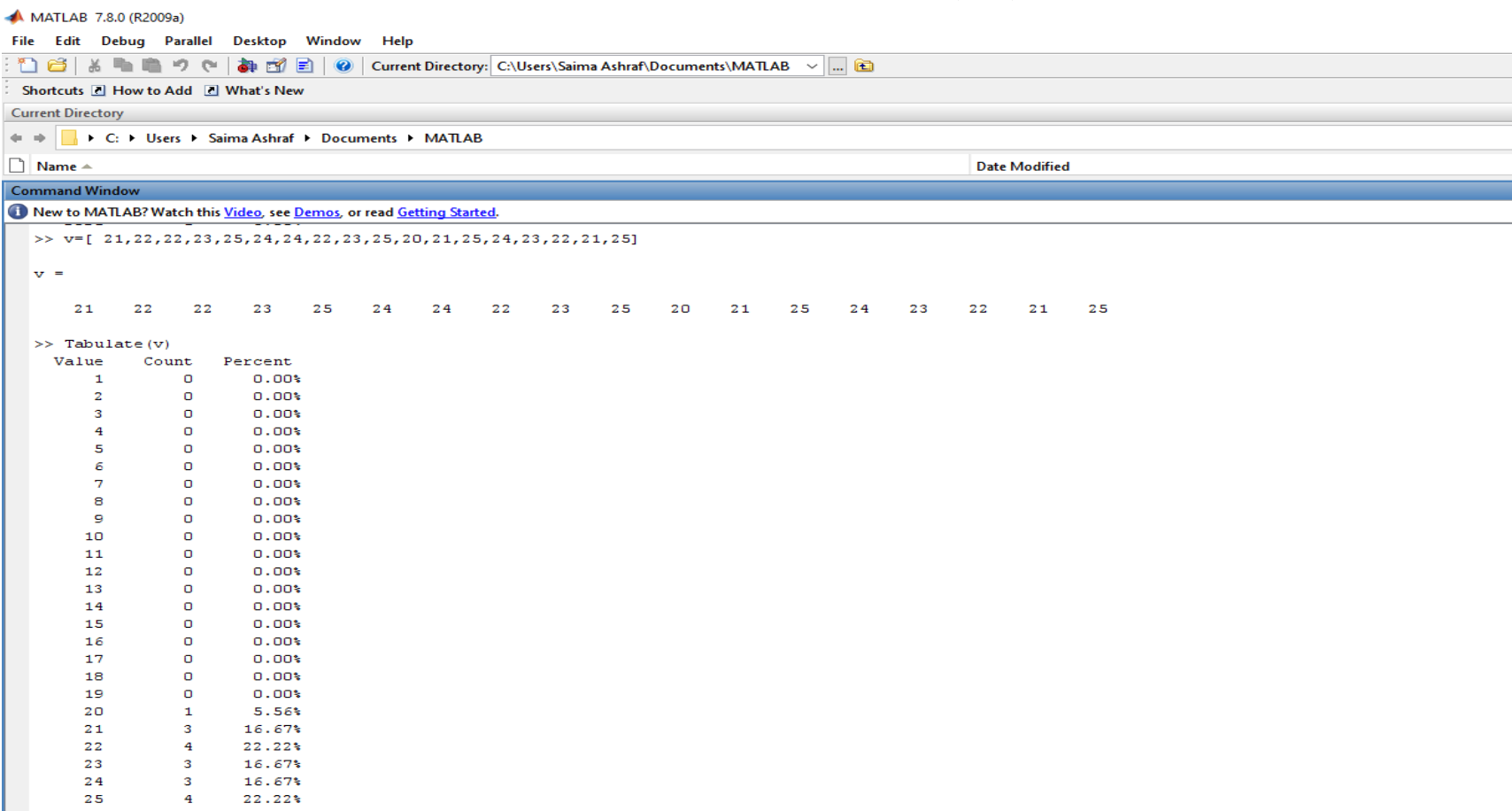
```
>> v=[ 21,22,22,23,25,24,24,22,23,25,20,21,25,24,23,22,21,25]
```

```
v =
```

```
21    22    22    23    25    24    24    22    23    25    20    21    25    24    23    22    21    25
```

Ungrouped Frequency Or Relative Frequency Distribution

- Command: Tabulate(v)



The image shows a screenshot of the MATLAB 7.8.0 (R2009a) Command Window. The window title is "MATLAB 7.8.0 (R2009a)". The menu bar includes File, Edit, Debug, Parallel, Desktop, Window, and Help. The Current Directory is set to "C:\Users\Saima Ashraf\Documents\MATLAB". The Command Window shows the following commands and output:

```
>> v = [ 21, 22, 22, 23, 25, 24, 24, 22, 23, 25, 20, 21, 25, 24, 23, 22, 21, 25]
```

The output of the command is:

```
v =  
  
    21    22    22    23    25    24    24    22    23    25    20    21    25    24    23    22    21    25
```

Then, the command `>> Tabulate(v)` is executed, resulting in the following table:

Value	Count	Percent
1	0	0.00%
2	0	0.00%
3	0	0.00%
4	0	0.00%
5	0	0.00%
6	0	0.00%
7	0	0.00%
8	0	0.00%
9	0	0.00%
10	0	0.00%
11	0	0.00%
12	0	0.00%
13	0	0.00%
14	0	0.00%
15	0	0.00%
16	0	0.00%
17	0	0.00%
18	0	0.00%
19	0	0.00%
20	1	5.56%
21	3	16.67%
22	4	22.22%
23	3	16.67%
24	3	16.67%
25	4	22.22%

Grouped Frequency Distribution

- Command: L=min value: size of C.I:max value+1
- Command: histc(name of variable, lower limit)

```
L=20:1:26;
```

```
F=histc(v,L);
```

Output

MATLAB 7.8.0 (R2009a)

File Edit Debug Parallel Desktop Window Help

Current Directory: C:\Users\Saima Ashraf\Documents\MATLAB

Shortcuts How to Add What's New

Current Directory

C:\Users\Saima Ashraf\Documents\MATLAB

Name

Command Window

New to MATLAB? Watch this [Video](#), see [Demos](#), or read [Getting Started](#).

```
5      0      0.00%
6      0      0.00%
7      0      0.00%
8      0      0.00%
9      0      0.00%
10     0      0.00%
11     0      0.00%
12     0      0.00%
13     0      0.00%
14     0      0.00%
15     0      0.00%
16     0      0.00%
17     0      0.00%
18     0      0.00%
19     0      0.00%
20     1      5.56%
21     3     16.67%
22     4     22.22%
23     3     16.67%
24     3     16.67%
25     4     22.22%
>> L=20:1:26

L =

    20    21    22    23    24    25    26

>> F=histc(v,L)

F =

     1     3     4     3     3     4     0
```

Cumulative Frequency Distribution

- Command: `c = cumsum(F)`

```
Command Window
New to MATLAB? Watch this Video, see Demos, or read Getting Started.

    11      0      0.00%
    12      0      0.00%
    13      0      0.00%
    14      0      0.00%
    15      0      0.00%
    16      0      0.00%
    17      0      0.00%
    18      0      0.00%
    19      0      0.00%
    20      1      5.56%
    21      3     16.67%
    22      4     22.22%
    23      3     16.67%
    24      3     16.67%
    25      4     22.22%

>> L=20:1:26

L =

    20    21    22    23    24    25    26

>> F=histc(v,L)

F =

     1     3     4     3     3     4     0

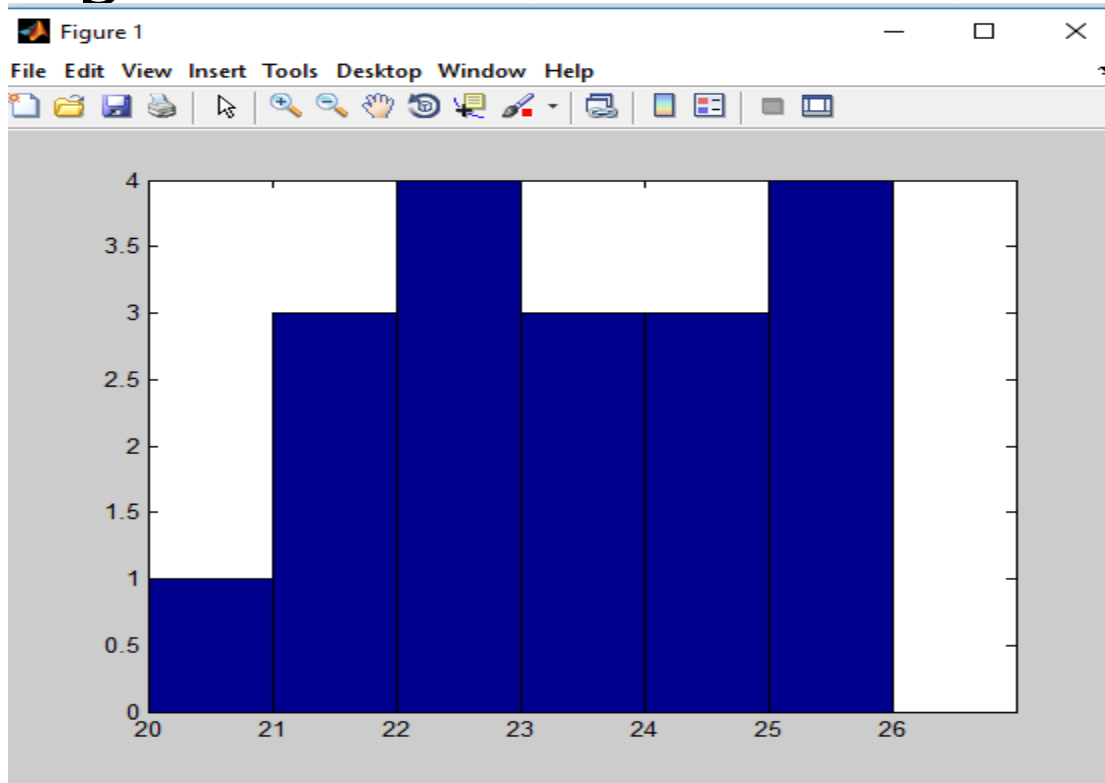
>> c= cumsum(F)

c =

     1     4     8    11    14    18    18
```

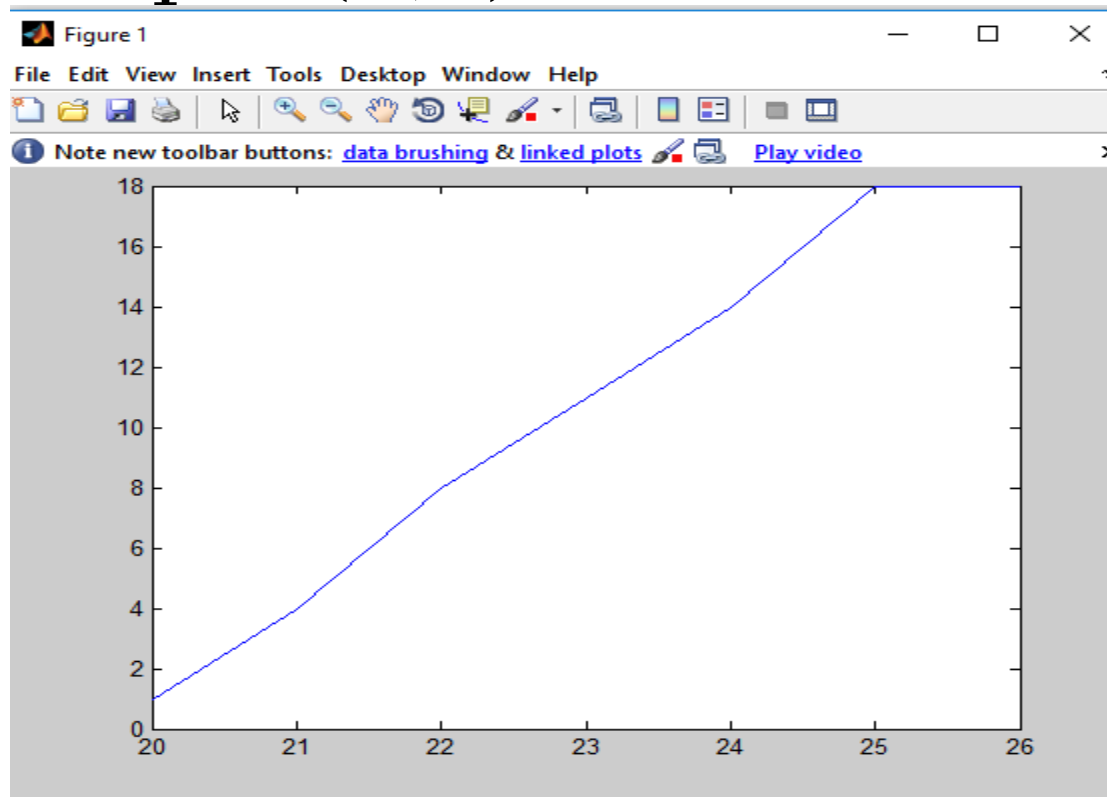
Graphs and Diagrams

- Histogram: `bar(L,F,'histc')`



Graphs and Diagrams

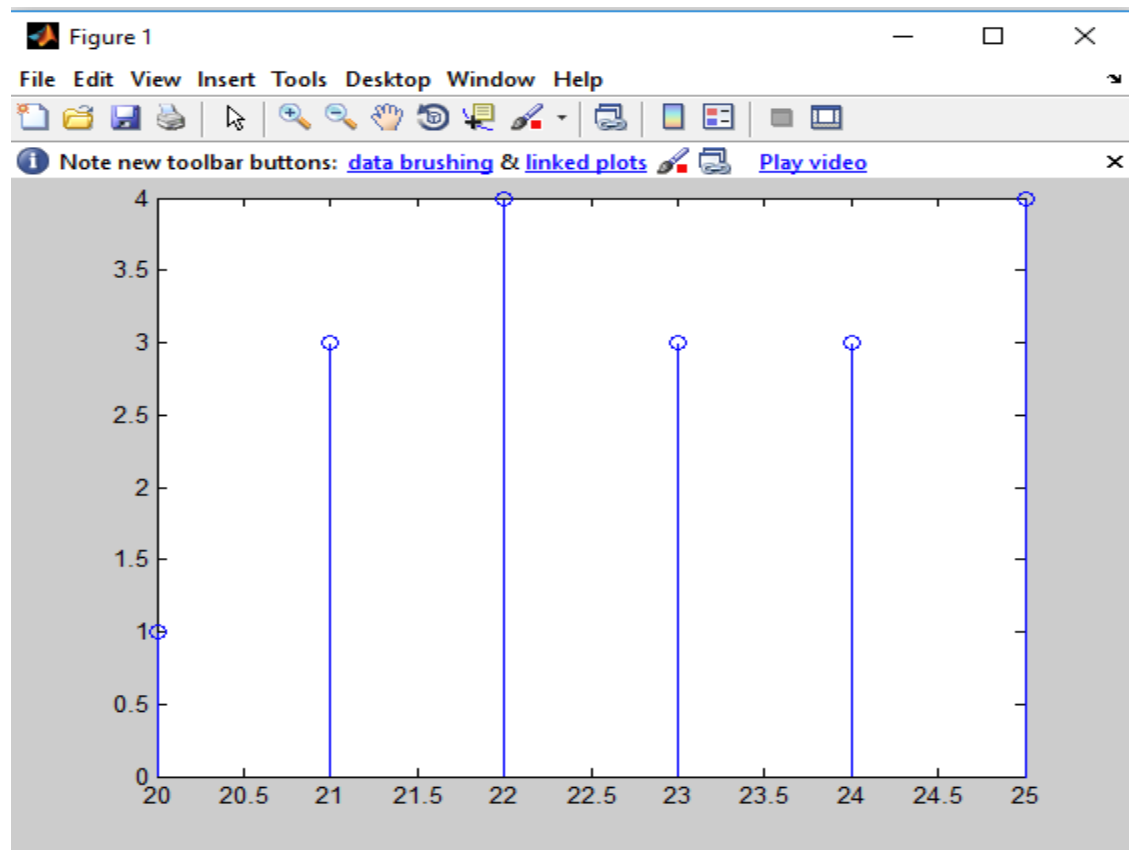
- Ogive: `plot(L,c)`



Graphs and Diagrams

- Stem and Leaf Plot: `stem(h,f)`

```
h =  
  
    20    21    22    23    24    25  
  
>> f=[1 3 4 3 3 4]  
  
f =  
  
     1     3     4     3     3     4  
  
>> stem(h,f)
```



Mid points

```
>> L=20:1:26
```

```
L =
```

```
    20    21    22    23    24    25    26
```

```
>> U=21:1:27
```

```
U =
```

```
    21    22    23    24    25    26    27
```

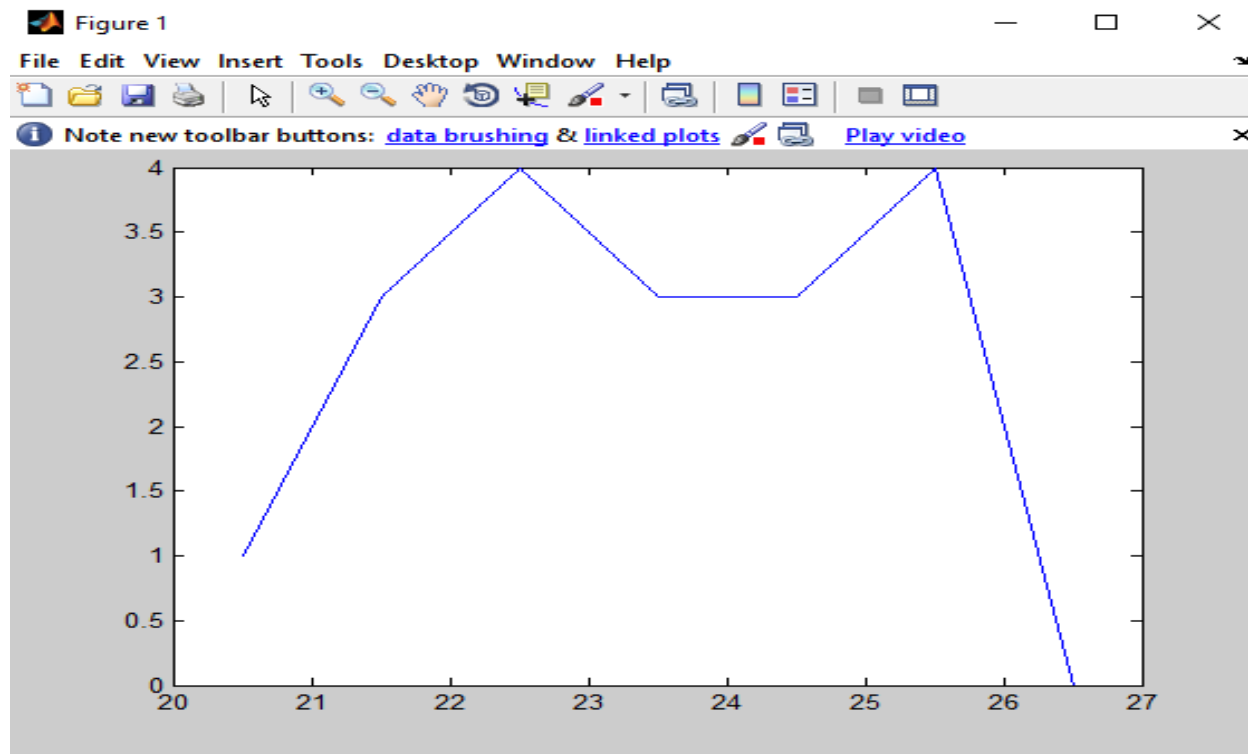
```
>> M=(L+U)/2
```

```
M =
```

```
    20.5000    21.5000    22.5000    23.5000    24.5000    25.5000    26.5000
```

Frequency curve and polygon

- Command: `plot(M,F)`



Graphs and Diagrams

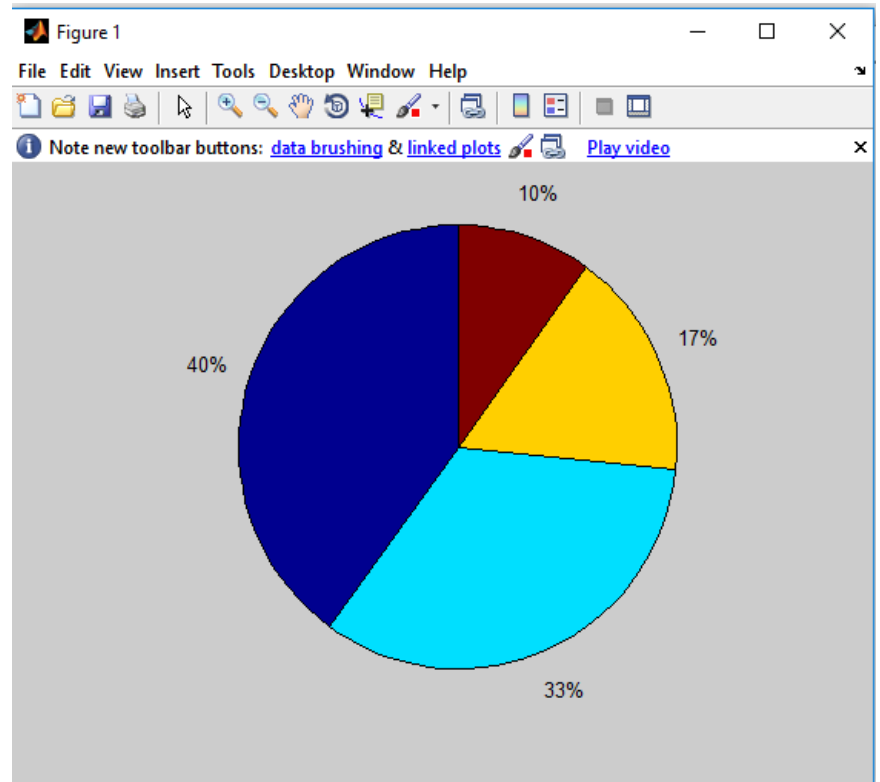
- Command: `pie(R)`

```
>> R=[144 120 60 36]

R =

    144    120     60     36

>> pie(R)
```



Graphs and Diagrams

- Command: `bar(x,y)`

```
>> x = 1900:10:2000;
>> x

x =

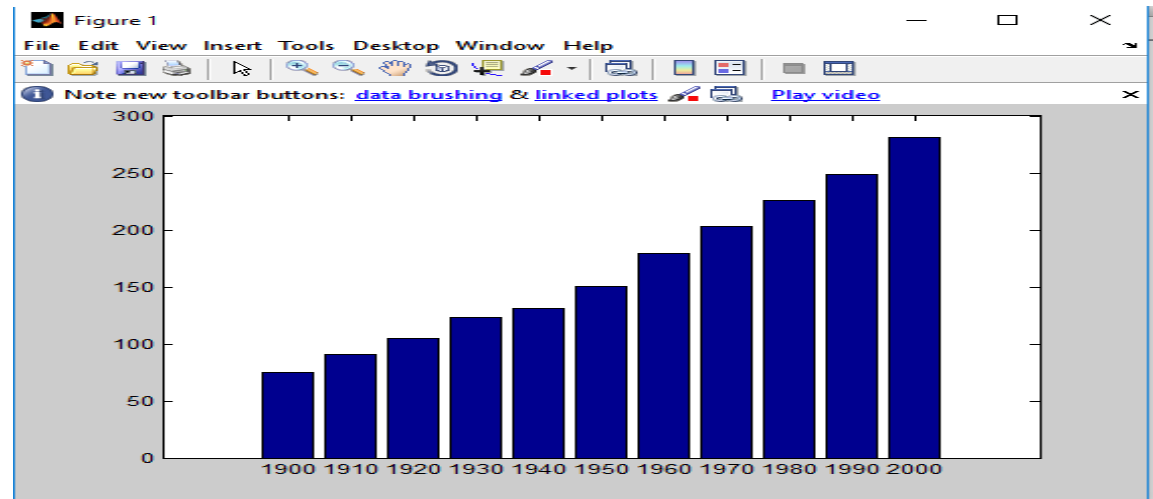
    1900    1910    1920    1930    1940    1950    1960    1970    1980    1990    2000

>> y = [75 91 105 123.5 131 150 179 203 226 249 281.5];
>> y

y =

    75.0000    91.0000    105.0000    123.5000    131.0000    150.0000    179.0000    203.0000    226.0000    249.0000    281.5000

>> bar(x,y)
```



Multiple Bar Diagram

- Command: `bar(x,y)`

```
>> y = [2 2 3; 2 5 6; 2 8 9; 2 11 12]
```

```
y =
```

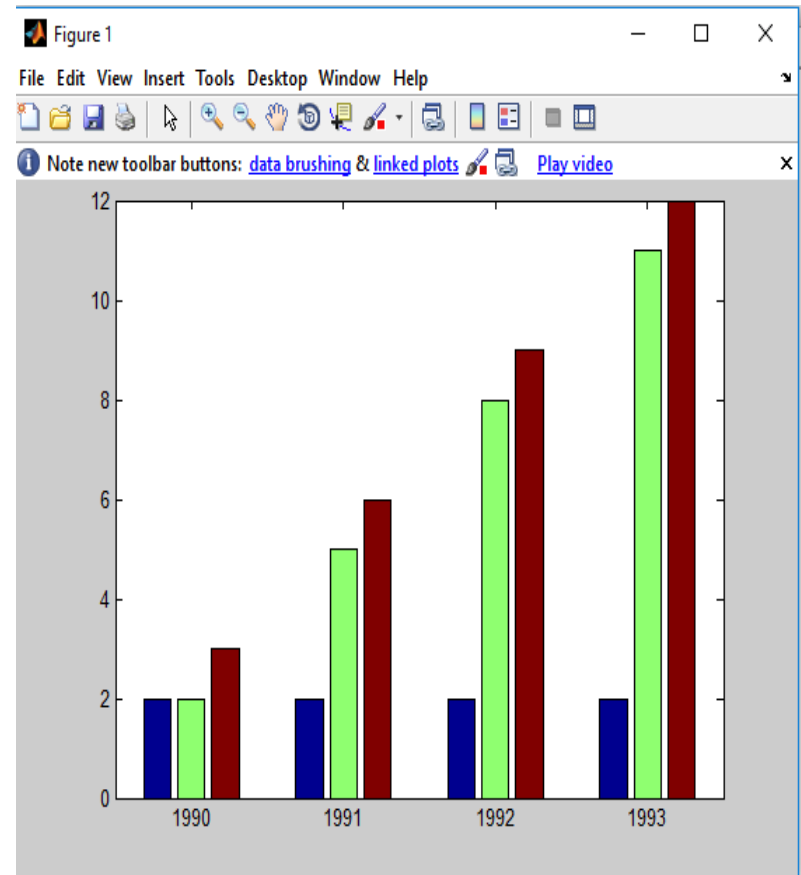
```
2     2     3
2     5     6
2     8     9
2    11    12
```

```
>> x=[1990 1991 1992 1993]
```

```
x =
```

```
1990      1991      1992      1993
```

```
>> bar(x,y)
```



Assignment Question

- Plot a sub-divided bar diagram and a Dot plot in MATLAB